

IOWA HIGHWAY RESEARCH BOARD

Minutes of October 31, 2003

Regular Board Members Present

L. Brehm	D. Julius
R. Ettema	B. Keierleber
T. Fonkert	J. Krist
R. Gould	C. Marker
L. Greimann	J. Selmer

Alternate Board Members Present

J. Berger for J. Adam	J. Ites
L. Jesse for K. Mahoney	G. Miller
J. Joiner for G. Parker	D. Short
R. Schletzbaum for C. Van Buskirk	R. Younie

Board Members With No Representation

M. Nahra

Secretary

M. Dunn

Visitors

LaDon Jones	<i>Digital Control, Inc.</i>
Philip Barnes	<i>FHWA</i>
Bob Given	<i>Iowa Concrete Paving Association</i>
Gordon Smith	<i>Iowa Concrete Paving Association</i>
Saleem Baig	<i>Iowa Department of Transportation</i>
Sara Buseman	<i>Iowa Department of Transportation</i>
Dave Claman	<i>Iowa Department of Transportation</i>
Ed Engle	<i>Iowa Department of Transportation</i>
Mike Heitzman	<i>Iowa Department of Transportation</i>
Sandra Larson	<i>Iowa Department of Transportation</i>
Mohammad Mujeeb	<i>Iowa Department of Transportation</i>
Wolfgang Kliemann	<i>Iowa State University</i>
Radhey Sharma	<i>Iowa State University</i>
Muhannad Suleiman	<i>Iowa State University</i>
Jim Cable	<i>Iowa State University/CCEE</i>
Stephen Jones	<i>Iowa State University/CCEE</i>
Eric Lorenz	<i>Iowa State University/CCEE</i>
Max Porter	<i>Iowa State University/CCEE</i>
Steve Andrlle	<i>Iowa State University/CTRE</i>
Tom Cackler	<i>Iowa State University/CTRE</i>
Brian Coree	<i>Iowa State University/CTRE</i>
Jim Grove	<i>Iowa State University/CTRE</i>
Dale Harrington	<i>Iowa State University/CTRE</i>
Tom Maze	<i>Iowa State University/CTRE</i>
Omar Smadi	<i>Iowa State University/CTRE</i>
Reg Souleyrette	<i>Iowa State University/CTRE</i>
Larry Stevens	<i>Iowa State University/CTRE/SUDAS</i>
Kejin Wang	<i>Iowa State University/PCC</i>
Bob Sperry	<i>Story County</i>
Hosin "David" Lee	<i>The University of Iowa</i>
David Eash	<i>USGS</i>

The meeting was held in the Video Conference Room at CTRE, Iowa State University, Ames, Iowa. The meeting was called to order at 9:00 A.M. by Dr. Rob Ettema.

Welcome

- On behalf of the Iowa Highway Research Board, Dr. Ettema thanked Steve Andrie and his staff for hosting the October IHRB meeting, lunch and tour.
- Dr. Wolfgang Kliemann, Associate Vice Provost for Research at ISU, was introduced and welcomed.

Agenda review/modification

- It was announced that agenda item number thirteen would be held until the December meeting.

Announcement of alternate member changes

- Danny Waid, Howard County Engineer, has been selected to serve as the alternate for Todd Fonkert, Bremer County Engineer, for District 2.

Approval of the minutes

- Brian Keierleber moved to approve the minutes from the September 26, 2003 meeting with no additions or corrections. Doug Julius seconded. Carried with 13 yes, 0 no, and 0 abstaining.

Review of revised proposal from 1st solicitation for FY 03-04

IHRB 03-1, Design Guide and Construction Specifications for NPDES Site Runoff Control

- As a result of the Board's input from the September IHRB meeting, this proposal was revised and brought back to the October meeting for review.
- Dale Harrington, Iowa State University/CTRE, handed out both a revised proposal with all the changes highlighted and a sheet containing a summary of the changes. The following changes were reviewed:
 - Increased coordination between SUDAS, Iowa DOT and counties on rural design and specifications.
 - The University of Iowa staff involved in the development of TR-485, "Erosion Control for Highway Applications - Phase II: Development and Implementation of a Web-Based Expert System for Erosion and Sediment Control Measures", will lead the erosion control literature review and educate the project team on utilizing the web-based Expert System.
 - The erosion control team for this project will review the Expert System and give feedback for possible improvements.
 - The addition of staff to develop recommendations on the use of specific erosion control equations, review the equations for accuracy to be used in the design manual and develop design examples.
 - The reduction of Snyder and Associates subcontract will offset the cost of the previous listed item.
- It was agreed that the changes were positive and the hard work and time that went into this extensive project proposal was commended.

- Jeff Krist moved to approve the revised proposal with a funding split of 1/3 Primary, 1/3 Secondary and 1/3 Street. Charles Marker seconded. Carried with 12 yes, 0 no, and 1 abstaining.

Proposal, “AAHSTO 2002 Pavement Design Guide Implementation Plan”

- Dr. Brian Coree, Iowa State University/CTRE, presented the history, the objectives, the current design method and reliability, the 2002 Design Guide process, the data requirements, the potential benefits, the recommendations and summary of Phases I and II of the proposed research. The potential of an additional Phase III was also mentioned.
- It was mentioned that Minnesota and Wisconsin are also conducting their own Phases I and II. There is on-going cooperation available through exchanges of information to enhance findings, but each area has different concerns and needs to focus separately to provide the best benefits for each state.
- It was discussed that there has been enough information given on this program that there should not be any new surprises upon release and moving forward now was encouraged.
- Although Phases I and II review only 6 projects, the amount of data needed for each is quite large, and the review time is only a few months. Phase III that was mentioned, will show a broader spectrum of projects, from residential streets to interstate, and will validate the model for Iowa.
- Larry Jesse moved to approve the proposal with a funding split of 80% Primary, 10% Secondary and 10% Street. Lyle Brehm seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Proposal for continuation of HR-296, “Local Technical Assistance Program (LTAP)”

- Bob Sperry, Story County Engineer, reviewed the advisory committee; mission statement; Iowa Roads Scholar Program; major categories of training; four available levels of accomplishment; participation numbers; link to research; 2004 training opportunities; sponsors and contribution levels; and budget history, overview and request for LTAP activities.
- John Joiner moved to approve the proposal and continue with the same funding split as in the past, of 10% Primary, 45% Secondary and 45% Street. Doug Julius seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Overview of the PCC Center’s FY 04 Program

- Tom Cackler, Iowa State University/PCC Center, presented a handout reviewing the Center’s Federal appropriations for the year. He explained the breakdown of additional funding for the projects. Some of the funding will be provided by private sector industry. Other funding was proposed for IHRB consideration, which led to the following 3 problem statements.

Problem Statement, “Laboratory Study of Structural Behavior of Alternative Dowel Bars”

- Dr. Max Porter, Iowa State University/CTRE, covered the background and recommendations of the previous projects completed on dowel bars, previous elemental tests, modified AASHTO

T253-76 test, next steps, research objectives and proposed tasks, proposed funding partnership, and a summary of the importance of the proposed project.

- HR-1080, “Synthesis of Dowel Bar Research” was specifically mentioned. The report identified gaps in knowledge on the subject and this proposed research addresses many of those gaps, thus leading to the FHWA’s interest.
- It was discussed that changing the ASTM is a separate process from modifying the AASHTO T253 test.
- It is anticipated that this research may identify changes in spacing, diameter, and placement of dowel bars and identify any changes in the gaps of knowledge.
- Roger Schletzbaum moved to approve the problem statement and invite Dr. Porter to submit a proposal to the Board. Charles Marker seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Problem Statement, “Design and Construction Procedures for Concrete Overlay and Widening of Existing Pavements”

- Dr. James Cable, Iowa State University/CTRE, reviewed the new concepts recently used in thin overlays on existing pavements, the proposed analysis of the Delaware County project, the objectives, the research tasks, and the budget of the problem statement.
- There was clarification that the \$6,000 was a DOT in-kind match for Road Rater testing.
- When the FHWA reviewed the proposal, it was requested that additional aspects be added to the research. It was noted that this would not affect IHRB funding.
- There is a thin overlay in Ames that was done a few years ago. It was recommended that this city project be reviewed as well.
- Jim Berger moved to approve the problem statement and invite Dr. Cable to submit a proposal to the Board. Lyle Brehm seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Problem Statement, “Measuring Pavement Profile at the Slipform Paver”

- Dr. James Cable, Iowa State University/CTRE, presented the information and general test results on the profiling equipment that Ames Engineering and Fred Carlson Co. have been developing to be used as a quality control device; the request for equipment for this project (four devices), so that monitoring can be done both across the pavement in each wheel path and behind separate parts of the paving train; the two proposed paving projects, one with Ames Engineering equipment and the other with Gomaco equipment; and the industry contribution and general project budget.
- FHWA has advised that more than two projects are used to review the equipment. The increased need for funding will be discussed with FHWA.
- It was mentioned that this project includes a subcontract with Steve Karamihas, University of Michigan, to analyze and interpret the data and compare with the current profiling methods used.

- Brian Keierleber moved to approve the problem statement and invite Dr. Cable to submit a proposal to the Board. Charles Marker seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Proposal for extension of TR-474, “Validation of the Mix Design Process for Cold In-Place Rehabilitation Using Foamed Asphalt - Phase II”

- Dr. Hosin “David” Lee, The University of Iowa, reviewed the test results and summary of Phase I research and presented the focus and need for Phase II, including the research plan, steering committee, estimated cost and research time period.
- The main desired differences in RAP samples are age, traffic count, and environmental factors from different areas of the state.
- There was a concern raised on how to get representative RAP samples for the mix design prior to any milling being done on the road. The idea to develop a catalog that would show the tendencies of different types of pavement was discussed. Another possibility, which has been tried, is to take a milling machine out prior to starting construction, take samples back and do the mix design prior to construction. Brown and Brown, in Kansas, has tried coring, crushing the core, and building 3 different gradations back. Then during the milling process of the project, they use a #4 screen and see how much is passing through that screen and decide which mix design they will use depending on how the milling is going at that time.
- It was mentioned that the information from this research would fit into the AASHTO 2002 pavement design guide.
- It was requested that the RAP samples studied vary in the type of aggregate contained in them.
- Dr. Lee is still looking for additional RAP sources. Assistance with transporting the RAP samples has been offered.
- John Selmer moved to approve the extension continuing with the same funding split of 60% Primary, 35% Secondary, and 5% Street. Charles Marker seconded. Carried with 14 yes, 0 no, and 0 abstaining.

Final Report TR-456, “Measuring Main-Channel Slopes for Major Rivers in Iowa”

- David Eash, USGS, reviewed the background, the main-channel slope measurements and equation, the main-channel slope curves for Iowa regions, the GIS measurements versus manual measurements, the adjustment factor, and a couple of examples contained within the completed research report.
- It was mentioned that due to the flat area of Region 1, main-channel slope is not a significant variable in the regression equation for estimating flood frequency discharges.
- Roger Schletzbaum moved to approve the final report. Brian Keierleber seconded. Carried with 13 yes, 0 no, and 0 abstaining.

Final Report TR-476, “PCVAL - A Computer Program for Valley Stage-Discharge Curves and Bridge Backwater Calculations”

- LaDon Jones, Digital Control, Inc., demonstrated different aspects and capabilities of the software designed for the project. Examples for backwater, valley rating curves, and encroachment were shown.
- It was explained that during the development of this software, and communications with the DNR, different things, such as the bridge valley relationship and floodway, were added. With this addition, the aspect of scour, which was included in the original proposal, was left out. Dr. Jones estimated \$7,500 to have it added to the program.
- Although it hasn't been looked into at this point, it was discussed that this data could be shared and tied to the design stage of the plans, as long as the format is understood.
- Dave Claman, Iowa DOT, and LaDon Jones are working on getting training coordinated for this program.
- Brian Keierleber duly moved to accept Version 1.0 of the program, and to approve the \$7,500 extension for scour to be added to the next version. Lyle Brehm seconded and requested that current version be distributed at this time. Carried with 13 yes, 0 no, and 0 abstaining.

New Business

- None

Dr. Rob Ettema adjourned the meeting.

**Date of Next Meeting: THE NEXT MEETING WILL BE HELD THURSDAY,
DECEMBER 11, 2003 AT 1:00 P.M. IN THE LARGE MATERIALS CONFERENCE
ROOM AT THE IOWA DOT, CENTRAL COMPLEX, IN AMES, IOWA.**

Mark Dunn, IHRB Secretary